

Application No: 10/525,557
Amendment A
Reply to Office action of 10/13/2006

Attorney Docket No: 3926.134

REMARKS

Claims 1-8 are pending in the application. Claims 5-8 are allowed. Claim 1 has been amended.

Applicants would like to first briefly review the present invention.

Cylinder crank cases, in particular those for light metal motors, are frequently reinforced locally in the area of the cylinder running surfaces by a cylinder liner. Cast in cylinder liners generally extend through the so-called cylinder space from the crank case to the cylinder head separation plane. Due to high pressures during the operation of the motor there may sometimes be caused a displacement of the cast in the cylinder liner in the direction of the crank shaft housing. This is referred to as settling of the liner. In the prior art, the settling can only be prevented in comparatively complex and labor intensive manner by casting technical methods or by surface treatment of the liner.

The object of the present invention is thus to provide an economical device and method in order to prevent the settling of the cylinder liner.

To achieve the object, the present invention provides a cylinder sleeve for a cylinder crank case, wherein the cylinder sleeve (2) includes on one end (5) a contouring (6) having multiple recesses (10), wherein at least one highest rise (8) of the contouring (6) supports the cylinder sleeve (2) in a pressure injection casting tool against a center sleeve (4).

Specification

The abstract of the disclosure has been objected to because it uses the legal phraseology of "Said cylinder" in line 2.

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Appropriate correction has been made.

Claim Rejections - 35 U.S.C. § 102

Claims 1-4 are rejected under 35 USC 102(b) as being anticipated by Hefti (US 1,836,798).

The Examiner has stated that Hefti discloses a cylinder sleeve, wherein the cylinder sleeve 1 includes on one end a contouring 7, one highest rise of the contouring 7 supports the cylinder sleeve 1 in a pressure injection casting tool against a center sleeve.

However, it is noted that the cylinder sleeve of Hefti is for cylinders of internal combustion engines, not for a cylinder crank case as in the present invention. In Hefti, the cylinder sleeve is located inside the casing 3. In contrast, in the present invention, the cylinder sleeve (2) is seated on a center sleeve (4).

Also, since the cylinder sleeve 1 of Hefti is not used in a pressure die casting tool, the problem of settling of the liner does not occur in Hefti and thus Hefti does not have any incentive to solve the problem.

Further, it is not clear how Hefti shows that one highest rise of the contouring 7 supports the cylinder sleeve 1 in a pressure injection casting tool against a center sleeve, because there is no center sleeve shown in Figs. 1 and 2 of Hefti.

In addition, it is noted that placing the two sections of the cylinder liner into a crankcase the waved contours of the section ends cannot prevent setting of the liner because they interlock each other and form a closed shape of the liner. Therefore, the waved contours do not come axially into contact with the cast of the crankcase and the crankcase cannot form an axial support for the liner preventing the setting.

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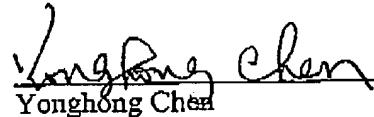
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Allowable Subject Matter

Applicants acknowledge the Examiner's statement that claims 5-8 are allowed.

Favorable consideration and early issuance of a Notice of Allowance to all the claims are respectfully requested. Should further issues remain prior to allowance, the Examiner is respectfully requested to contact the undersigned at the indicated telephone number.

Respectfully submitted,


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